

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MITSURU YAMAMOTO

Appeal No. 2001-0713
Application 09/016,304

ON BRIEF

Before JERRY SMITH, BARRETT and RUGGIERO, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-12, which constituted all the claims in the application. An amendment after final rejection was filed on April 24, 2000 and was entered by the examiner. This amendment cancelled claims 9-12.

Accordingly, this appeal is directed to the rejection of claims 1-8.

The disclosed invention pertains to the field of piezoelectric ceramic transformers. More particularly, the invention relates to a piezoelectric ceramic plate having an outer shape of a disk which can be driven in a radial direction expansion vibration basic mode. The invention also relates to a piezoelectric ceramic plate having an outer shape of a square plate which can be driven in a contour direction expansion vibration basic mode.

Representative claim 1 is reproduced as follows:

1. A piezoelectric ceramic transformer comprising:

a piezoelectric ceramic plate having an outer shape of a disk, wherein:

said piezoelectric ceramic plate is divided, where circular surfaces of said piezoelectric ceramic plate are defined as principal surfaces, in a thickness direction into two regions parallel to said principal surfaces and one of said two regions is formed as a driving part while the other region is formed as a generating part, and each of said driving part, and said generating part forms a layering structure which comprises a plurality of inner electrode pairs formed in parallel to said principal surfaces and opposing each other in the thickness direction and regions between the inner electrodes, said regions between the inner electrodes being polarized so that any adjacent ones of said inner electrodes may have opposite polarization directions to each other;

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an intermediate region between said driving part and said generating part is set as a non-polarized insulating layer; and

the inner electrodes which oppose each other are partially exposed to different side end faces of said piezoelectric ceramic plate so that the polarities thereof may be opposite to each other and are alternately connected to each other by outer electrodes and further connected to respective electronic terminals, said piezoelectric ceramic transformer being driven in a radial direction expansion vibration basic mode.

The examiner relies on the following references:

Clawson et al. (Clawson)	3,610,969	Oct. 05, 1971
Ogawa	4,564,782	Jan. 14, 1986
Sugishita	5,828,160	Oct. 27, 1998
		(filed Sep. 10, 1997)

The following rejections are on appeal before us:

1. Claim 3 stands rejected under 35 U.S.C. § 102(b) as being anticipated by the disclosure of Ogawa.

2. Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Ogawa taken alone.

3. Claims 2 and 4 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Ogawa in view of Clawson.

4. Claims 5 and 7 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Sugishita taken alone.

5. Claims 6 and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Sugishita in view of Clawson.

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Rather than repeat the arguments of appellant or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon does not support any of the rejections as formulated by the examiner. Accordingly, we reverse.

We consider first the rejection of claim 3 under 35 U.S.C. § 102(b) as being anticipated by the disclosure of Ogawa. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the

recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

The examiner indicates how he finds anticipation with respect to claim 3 [answer, page 3]. Appellant argues that Ogawa fails to disclose a piezoelectric transformer driven in a profile direction expansion vibration basic mode or a ceramic plate having an outer shape of a square plate. Appellant argues that Ogawa only operates in a thickness direction extension vibration mode at the disclosed frequencies. Appellant also argues that Ogawa does not disclose the claimed arrangement of the inner and outer electrodes [brief, pages 6-7]. The examiner responds that Ogawa discloses a transformer with a square outer shape that is driven in the claimed direction [answer, page 11]. Appellant responds that the Ogawa drawing is not drawn as a square shape and that it cannot be presumed that the shape is a square. Appellant also reiterates that there is no disclosure within Ogawa that the transformer is driven in the profile direction expansion vibration basic mode as claimed or that the inner and

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outer electrodes are connected as claimed [reply brief, pages 1-5].

We will not sustain the rejection of claim 3 for essentially the reasons argued by appellant in the briefs. The examiner's "findings" are based on opinion, speculation and conjecture. The disclosure of Ogawa simply does not disclose the specific recitations of claim 3 which are argued by appellant.

We now consider the various rejections of the claims under 35 U.S.C. § 103. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825

(1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered and are deemed to be waived by appellant [see 37 CFR § 1.192(a)].

With respect to the rejection of claim 1 based on Ogawa taken alone, the examiner finds that Ogawa teaches the claimed invention except for the shape of the disc and a radial

polarization. The examiner finds that change of shape has no patentable significance without unexpected results. The examiner, therefore, finds that it would have been obvious to the artisan to change the shape of the ceramic plate in Ogawa. The examiner also takes "Official Notice" that it was well known to drive piezoelectric devices in the radial direction [answer, pages 4-5].

Appellant argues that Ogawa fails to teach that the piezoelectric transformer is driven in a radial direction expansion vibration basic mode or that the ceramic plate has an outer shape of a disk as claimed. Appellant argues that the examiner improperly relied on a per se rule of obviousness that a change in shape is not patentable. Appellant also argues that Ogawa does not teach the arrangement of inner and outer electrodes as claimed [brief, page 7]. The examiner responds that appellant has shown no unexpected results and that a change in shape is not patentable. The examiner also notes that the taking of "Official Notice" has become admitted prior art because appellant did not seasonably traverse this position [answer, pages 10-11]. Appellant reiterates his position that there is no basis for the examiner's holding that a change in shape is not patentable. Appellant also responds that he challenged the

examiner's taking of "Official Notice" during the prosecution of this application and that the examiner has failed to provide a teaching in support of the official notice [reply brief, pages 5-10].

We will not sustain the rejection of claim 1 for the reasons argued by appellant in the briefs. The examiner's reliance on Ogawa is erroneous for reasons discussed above. Additionally, the examiner has improperly relied on a per se rule of obviousness and has improperly taken official notice of the facts. The examiner should avoid using any per se rules of obviousness. Obviousness must be determined on a case by case basis. The examiner must always consider the specific recitations of the claimed invention and the specific teachings of the applied prior art. The Federal Circuit has also determined that an examiner's reliance on "findings" of official notice or design choice do not establish a prima facie case of obviousness when properly challenged.

With respect to the rejection of dependent claims 2 and 4 based on Ogawa and Clawson, since Clawson does not overcome the deficiencies of Ogawa discussed above, we do not sustain the rejection of claims 2 and 4.

We now consider the rejection of claims 5 and 7 based on Sugishita taken alone. The examiner's rejection indicates that Sugishita does not disclose that the piezoelectric ceramic plate is square, that adjacent electrodes are exposed at different sides, that the device has a disk shape, or what mode the transformer is driven in [answer, page 7]. The examiner dismisses these differences by relying on per se rules of obviousness, by relying on official notice, and by simply stating that the differences between the claimed invention and the prior art would have been obvious to the artisan [id., pages 7-8].

Appellant basically argues that Sugishita suffers the same deficiencies as Ogawa and makes the same arguments that we considered above. Since we agree with appellant that the issues with respect to this rejection are the same as the issues with respect to the rejection based on Ogawa, we will not sustain the rejection of claims 5 and 7. With respect to the rejection of dependent claims 6 and 8 based on Sugishita and Clawson, since Clawson does not overcome the deficiencies of Sugishita discussed above, we do not sustain the rejection of claims 6 and 8.

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In summary, we have not sustained any of the examiner's rejections of the claims on appeal. Therefore, the decision of the examiner rejecting claims 1-8 is reversed.

REVERSED

JERRY SMITH)	
Administrative Patent Judge)	
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LEE E. BARRETT)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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JOSEPH F. RUGGIERO)	
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